

Applicant : Ulrike Reeh et al.
Serial No. : 09/221,789
Filed : December 28, 1998
Page : 2

Attorney's Docket No. 12406-003001

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1.-9. Canceled

10. (Previously Presented) The semiconductor component according to claim 34, wherein the radiation emitted by said semiconductor body has a luminescence intensity maximum in a blue spectral region at a wavelength between 420 nm and 460 nm.

11. Canceled

12. Canceled

13. (Previously Presented) The semiconductor component according to claim 34, wherein said luminescence conversion layer comprises a plurality of layers with mutually different wavelength conversion properties.

14. (Previously Presented) the semiconductor component according to claim 34, wherein said luminescence conversion layer includes organic dye molecules in a plastic matrix.

15. (Original) The semiconductor component according to claim 14, wherein said plastic matrix is formed from a plastic material selected from the group consisting of silicone, thermoplastic material, and thermosetting plastic material.

Applicant : Ulrike Reeh et al.
Serial No. : 09/221,789
Filed : December 28, 1998
Page : 3

Attorney's Docket No. 12406-003001

16. (Original) The semiconductor component according to claim 14, wherein said luminescence conversion element has organic dye molecules in a matrix selected from the group consisting of an epoxy resin matrix and a polymethyl methacrylate matrix.

17. (Previously Presented) The semiconductor component according to claim 34, wherein said luminescence conversion layer has at least one inorganic luminescence material selected from the phosphor group.

18. (Original) The semiconductor component according to claim 17, wherein the inorganic luminescent material is selected from the group of Ce-doped garnets.

19. (Original) The semiconductor component according to claim 18, wherein the inorganic luminescent material is YAG:Ce.

20. (Original) The semiconductor component according to claim 17, wherein the inorganic luminescent material is embedded in an epoxy resin matrix.

21. (Original) The semiconductor component according to claim 17, wherein the inorganic luminescent material is embedded in a matrix formed of inorganic glass with a relatively low melting point.

22. (Original) The semiconductor component according to claim 20, wherein the inorganic luminescent material has a mean particle size of approximately 10 μm .

23. (Previously Presented) The semiconductor component according to claim 34, wherein said luminescence conversion layer is provided with a plurality of mutually different materials selected from the group consisting of organic and inorganic luminescent materials.

Applicant : Ulrike Reeh et al.
Serial No. : 09/221,789
Filed : December 28, 1998
Page : 4

Attorney's Docket No. 12406-003001

24. (Previously Presented) The semiconductor component according to claim 34, wherein said luminescence conversion layer includes dye molecules selected from the group consisting of organic and inorganic dye molecules partly with and partly without a wavelength conversion effect.

25. (Previously Presented) The semiconductor component according to claim 34, wherein said luminescence conversion element includes light-diffusing particles.

26. (Previously Presented) The semiconductor component according to claim 34, which comprises a transparent encapsulation with light-diffusing particles.

27. (Previously Presented) The semiconductor component according to claim 34, wherein said luminescence conversion layer comprises at least one luminescent 4f-organometallic compound.

28. (Previously Presented) The semiconductor component according to claim 34, wherein said luminescence conversion layer includes a luminescent material that is luminescent in a blue region.

29. (Previously Presented) The semiconductor component according to claim 34, which comprises a transparent encapsulation with a luminescent material that is luminescent in a blue region.

30. (Previously Presented) A full-color LED display device, comprising a plurality of the light-radiating semiconductor components of claim 34 arranged in a full-color LED display.

31. (Previously Presented) In an interior lighting of an aircraft cabin, a plurality of the light-radiating semiconductor components according to claim 34.

Applicant : Ulrike Reeh et al.
Serial No. : 09/221,789
Filed : December 28, 1998
Page : 5

Attorney's Docket No. 12406-003001

32. (Previously Presented) In combination with a display device, a plurality of the semiconductor components according to claim 34 disposed to illuminate a display of the display device.

33. (Original) The combination according to claim 32, wherein said display device includes a liquid crystal display.

34. (Previously Presented) A white light emitting semiconductor component, comprising:
a semiconductor body having a layer sequence suitable for emitting electromagnetic radiation of a first wavelength range comprising at least blue light during an operation of the semiconductor component;

a luminescence conversion layer being disposed directly on said semiconductor body and having a substantially constant thickness and containing at least one luminescent conversion material,

said luminescence conversion material being suitable for absorbing a radiation originating from the first wavelength range and emitting light in at least a portion of a second wavelength range consisting of green, yellow, and red,

a part of the blue light passing through the luminescent conversion layer from one side to another, such that the semiconductor component emits white light comprising the part of the blue light passing through the luminescent conversion layer and the light emitted in at least the portion of the second wavelength range.

35-37. Canceled

38. (Previously Presented) The semiconductor component according to claim 34 further comprising transparent resin above said luminescence conversion layer.

Applicant : Ulrike Reeh et al.
Serial No. : 09/221,789
Filed : December 28, 1998
Page : 6

Attorney's Docket No. 12406-003001

39. (Previously Presented) The semiconductor component according to claim 17, wherein the inorganic luminescent material is selected from the group of Ce-doped garnets.

40. (Previously Presented) The semiconductor component according to claim 17, wherein the inorganic luminescent material is YAG:Ce.

41. (Previously Presented) The semiconductor component according to claim 34, wherein said luminescence conversion layer has at least one inorganic luminescence material selected from the phosphor group, and wherein the inorganic luminescent material is embedded in an epoxy resin matrix.

42. (Previously Presented) The semiconductor component according to claim 34, wherein said luminescence conversion layer has at least one inorganic luminescence material selected from the phosphor group, and wherein the inorganic luminescent material is embedded in a matrix formed of inorganic glass with a relatively low melting point.

43. (Previously Presented) the semiconductor component according to claim 34, wherein said luminescence conversion layer has at least one inorganic luminescence material selected from the phosphor group, and wherein the inorganic luminescent material is embedded in an epoxy resin matrix, and wherein the inorganic luminescent material has a mean particle size of approximately 10 μm .

44. (Previously Presented) The semiconductor component according to claim 34, wherein the radiation emitted by said semiconductor body has a luminescence intensity maximum at a wavelength below 520 nm.

45. (Previously Presented) The semiconductor component according to claim 34, wherein said semiconductor body is adapted to emit ultraviolet radiation during operation of the

Applicant : Ulrike Reeh et al.
Serial No. : 09/221,789
Filed : December 28, 1998
Page : 7

Attorney's Docket No. 12406-003001

semiconductor component, and said luminescence conversion layer converts at least a portion of the ultraviolet radiation into the second wavelength range.

46. (Previously Presented) The semiconductor component according to claim 34, wherein the luminescence conversion material is suitable for absorbing the radiation originating in the first wavelength and emitting yellow light, and wherein during operation the semiconductor component emits white light comprising the part of the blue light passing through the luminescent conversion layer and the yellow light.

47. (Previously Presented) The semiconductor component according to claim 34, wherein the luminescence conversion material is suitable for absorbing the radiation originating in the first wavelength and emitting green light and red light, and wherein during operation the semiconductor component emits white light comprising the part of the blue light passing through the luminescent conversion layer, the green light, and the red light.

48. (New) The semiconductor component according to claim 34, wherein said luminescence conversion layer has at least one inorganic luminescence material selected from the phosphor group, and wherein the inorganic luminescent material is embedded in a silicone material.